

What is claimed is:

1. A tool storage device comprising:
 - (a) a hollow upright pivot shaft having two ends, a top end and a bottom end;
 - (b) the hollow upright pivot shaft end capped on the top end and the bottom end; and
 - (c) a plurality of coupling rings respectively mounted on the hollow upright pivot shaft at different elevations, and a plurality of support arms respectively coupled to the coupling rings, each of the support arms having a proximal end, a distal end, a front wall, a top wall, and a bottom wall, and a plurality of open receiving chambers respectively vertically cut through said top and bottom walls for holding hand tools, each said receiving chamber having a top opening in said top wall, and a bottom opening in said bottom wall.
2. The tool storage device of claim 1, wherein the front opening of each of the open chambers has a top side opened and disposed in communication with the top opening of the respective receiving open chamber, and a bottom side closed.
3. The tool storage device of claim 2, wherein each said open receiving chamber has a neck portion in said top opening.
4. The tool storage device of claim 1, wherein each said support arm has a male coupling block at the proximal end thereof for coupling one coupling ring; each coupling ring has a female coupling block at the periphery thereof for receiving the male coupling block of one said support arm.
5. The tool storage device of claim 4, wherein the male coupling block of each said support arm has a T-shaped coupling portion; the female coupling block of each said coupling ring defines an upwardly extended T-groove for receiving the T-shaped coupling portion of the male coupling block of each said support arm.
6. The tool storage device of claim 5, wherein the male coupling blocks of the support arms are respectively extended from the proximal ends of said support arms at different angles.
7. The tool storage device of claim 6, further comprising a plurality of spacers respectively mounted on the hollow upright pivot shaft between two adjacent coupling rings.

8. The tool storage device of claim 7, wherein each spacer has a clamp at the periphery thereof for holding a hand tool.

9. The tool storage device of claim 1, wherein each coupling ring has a plurality of locating grooves spaced at equal angles around the inner diameter and axially extend to the top and the bottom sides thereof; the hollow upright pivot shaft comprises a plurality of spring strips longitudinally aligned on the periphery in a line for holding said coupling rings in position, each said spring strip having a free end provided with a raised portion for engaging a locating groove of a coupling ring.

10. The tool storage device of claim 1, wherein the hollow upright pivot shaft further comprises a rib provided at the periphery thereof in line with and between two spring strips for engaging one locating groove of the coupling ring to stop the coupling ring from rotation relative to the hollow upright pivot shaft.

11. The tool storage device of claim 1, wherein the open receiving chamber of each support arm and the top and the bottom openings of each open receiving chamber are made gradually smaller in the direction from the proximal end toward the distal end.

12. The tool storage device of claim 1, wherein each support arm has a thickness made gradually smaller in the direction from the proximal end to the distal end.

13. A tool storage device comprising:

- (a) a hollow upright pivot shaft having two ends, a top end and a bottom end;
- (b) the hollow upright pivot shaft end capped on the top end and the bottom end;
- (c) each end cap has a coupling wall and a plughole formed in the coupling wall;
- (d) a plurality of coupling rings respectively mounted on the hollow upright pivot shaft at different elevations and a plurality of support arms respectively coupled to the coupling rings, each of the support arms having a proximal end, a distal end, a front wall, a top wall, and a bottom wall, and a plurality of open receiving chambers respectively vertically cut through said top and bottom walls for holding hand tools, each said receiving chamber having a top opening in said top wall and a bottom opening in said bottom wall.

14. A tool storage device comprising:

- (a) a hollow upright pivot shaft;

- (b) a plurality of coupling rings respectively rotatably mounted on said hollow upright pivot shaft at different elevations;
- (c) a plurality of support arms respectively coupled to said coupling rings, each said support arm having a proximal end, a distal end, a front wall, a top wall, and a bottom wall, and a plurality of open receiving chambers respectively vertically cut through said top and bottom walls for holding hand tools, each said open receiving chamber having a front opening in said front wall, a top opening in said top wall in communication with said front opening, a bottom opening in said bottom wall, and a neck portion in said top opening;
- (d) at least one tool rack for holding tools; and
- (e) a plurality of connectors adapted to pivotally connect at least one tool rack to the hollow upright pivot shaft, each said connector comprising a coupling ring pivotally connectable to the hollow upright pivot shaft, a flat arm for carrying one said tool rack, a neck radially extended from the periphery of the coupling ring and terminating at the distal end of the flat arm, a first ridged portion transversely provided at the proximal end of the flat arm and connected to the neck, and a distal ridged portion transversely provided at an opposite end of said flat arm and defines with the proximal ridged portion and the flat arm a space for accommodating one tool rack.

15. The tool storage device of claim 14, wherein each tool rack has a recessed area in a bottom wall thereof, a plurality of protruding portions spaced from one another in said recessed area, and a plurality of finger grooves formed in the recessed area and separated from one another by the protruding portions.

16. The tool storage device of claim 14, comprising one tool rack and two support arms.

17. The tool storage device of claim 14, wherein each said support arm has a male coupling block at the proximal end thereof for coupling to one said coupling ring; each said coupling ring has a female coupling block at the periphery thereof for receiving the male coupling block of one said support arm.

18. The tool storage device of claim 17, wherein the male coupling block of each said support arm has a T-shaped coupling portion; the female coupling block of each said coupling ring defines an upwardly extended T-groove for receiving the T-shaped coupling portion of the male coupling block of one said support arm.

19. The tool storage device of claim 18, wherein the male coupling blocks of said support arms are respectively extended from the proximal end of said support arms at different angles.

20. The tool storage device of claim 14, further comprising a plurality of spacers respectively mounted on said hollow upright pivot shaft between each of two adjacent coupling rings.

21. The tool storage device of claim 20, wherein each said spacer has a clamp at the periphery thereof for holding a hand tool.

22. The tool storage device of claim 14, wherein each said coupling ring has a plurality of locating grooves spaced at equal angles around the inner diameter and axially extend to the top and the bottom sides thereto; said hollow upright pivot shaft comprising a plurality of spring strips longitudinally aligned on the periphery in a line for holding said coupling rings in position, each said spring strip having a free end provided with a raised portion for engaging one locating groove of one said coupling ring.

23. The tool storage device of claim 22, wherein said hollow upright pivot shaft further comprises a rib provided at the periphery thereof in line with and between two of said spring strips for engaging one locating groove of one said coupling ring to stop the coupling ring from rotation relative to said hollow upright pivot shaft.

24. The tool storage device of claim 14, wherein the open receiving chamber of each said support arm and the top and the bottom openings of each said open receiving chamber are made gradually smaller in direction from said proximal end toward said distal end.

25. The tool storage device of claim 22, wherein each said support arm has a thickness made gradually smaller in direction from said proximal end toward said distal end.

26. A tool storage device comprising:

- (a) a hollow upright pivot shaft having two ends, a top end and a bottom end;
- (b) the hollow upright pivot shaft end capped on the top end and the bottom end; and
- (c) each end cap has a coupling wall and a plughole formed in the coupling wall.
- (d) a plurality of coupling rings respectively rotatably mounted on said hollow upright pivot shaft at different elevations;

- (e) a plurality of support arms respectively coupled to said coupling rings, each said support arm having a proximal end, a distal end, a front wall, a top wall, and a bottom wall, and a plurality of open receiving chambers respectively vertically cut through said top and bottom walls for holding hand tools, each said open receiving chamber having a front opening in said front wall, a top opening in said top wall in communication with said front opening, a bottom opening in said bottom wall, and a neck portion in said top opening;
- (f) at least one tool rack for holding tools; and
- (g) a plurality of connectors adapted to pivotally connect at least one tool rack to the hollow upright pivot shaft, each said connector comprising a coupling ring pivotally connectable to the hollow upright pivot shaft, a flat arm for carrying one said tool rack, a neck radially extended from the periphery of the coupling ring and terminating at the distal end of the flat arm, a first ridged portion transversely provided at the proximal end of the flat arm and connected to the neck, and a distal ridged portion transversely provided at an opposite end of said flat arm and defines with the proximal ridged portion and the flat arm a space for accommodating one tool rack.

27. The tool storage device of claim 26, wherein each tool rack has a recessed area in a bottom wall thereof, a plurality of protruding portions spaced from one another in said recessed area, and a plurality of finger grooves formed in the recessed area and separated from one another by the protruding portions.

28. The tool storage device of claim 26, comprising one tool rack and two support arms.

29. A tool storage device comprising:

- (a) a hollow upright pivot shaft having two ends, a top end and a bottom end;
- (b) the hollow upright pivot shaft end capped on the top end and the bottom end;
- (c) each end cap has a coupling wall and a plughole formed in the wall;
- (d) a plurality of detachable connecting structures each having a plug rod attached to each end cap through the plughole;
- (e) a plurality of fastening structures comprising a base having a plurality of apertures for fastening to an upright support structure;

- (f) each fastening structure comprising a coupling unit detachably connected to the connecting structure at the top and the bottom ends of the capped hollow upright pivot shaft;
- (g) a plurality of coupling rings respectively mounted on the hollow upright pivot shaft at different elevations and a plurality of support arms respectively coupled to the coupling rings, each of the support arms having a proximal end, a distal end, a front wall, a top wall, and a bottom wall, and a plurality of open receiving chambers respectively vertically cut through said top and bottom walls for holding hand tools, each open receiving chamber having a top opening in said top wall, and a bottom opening in said bottom wall;
- (h) at least one tool rack for holding tools; and
- (i) a plurality of connectors adapted to pivotally connect at least one tool rack to the hollow upright pivot shaft, each said connector comprising a coupling ring pivotally connectable to the hollow upright pivot shaft, a flat arm for carrying one said tool rack, a neck radially extended from the periphery of the coupling ring and terminating at the distal end of the flat arm, a first ridged portion transversely provided at the proximal end of the flat arm and connected to the neck, and a distal ridged portion transversely provided at an opposite end of said flat arm and defines with the proximal ridged portion and the flat arm a space for accommodating one tool rack.

30. The tool storage device of claim 29, wherein each tool rack has a recessed area in a bottom wall thereof, a plurality of protruding portions spaced from one another in said recessed area, and a plurality of finger grooves formed in the recessed area and separated from one another by the protruding portions.

31. The tool storage device of claim 29, comprising one tool rack and two support arms.

32. The tool storage device of claim 29, wherein each said support arm has a male coupling block at the proximal end thereof for coupling to one said coupling ring; each said coupling ring has a female coupling block at the periphery thereof for receiving the male coupling block of one said support arm.

33. The tool storage device of claim 32, wherein the male coupling block of each said support arm has a T-shaped coupling portion; the female coupling block of each

said coupling ring defines an upwardly extended T-groove for receiving the T-shaped coupling portion of the male coupling block of one said support arm.

34. The tool storage device of claim 33, wherein the male coupling blocks of said support arms are respectively extended from the proximal end of said support arms at different angles.

35. The tool storage device of claim 29, further comprising a plurality of spacers respectively mounted on said hollow upright pivot shaft between each two adjacent coupling rings.

36. The tool storage device of claim 35, wherein each said spacer has a clamp at the periphery thereof for holding a hand tool.

37. The tool storage device of claim 29, wherein each said coupling ring has a plurality of locating grooves spaced at equal angles around the inner diameter and axially extend to the top and the bottom sides thereto; said hollow upright pivot shaft comprises a plurality of spring strips longitudinally aligned on the periphery in a line for holding said coupling rings in position. Each said spring strip having a free end with a raised portion for engaging a locating groove of a said coupling ring.

38. The tool storage device of claim 37, wherein said hollow upright pivot shaft further comprises a rib provided at the periphery thereof in line with and between two of said spring strips for engaging one locating groove of one said coupling ring to stop the coupling ring from rotation relative to said hollow upright pivot shaft.

39. The tool storage device of claim 29, wherein the open receiving chamber of each said support arm and the top and the bottom openings of each said open receiving chamber are made gradually smaller in direction from said proximal end toward said distal end.

40. The tool storage device of claim 37, wherein each said support arm has a thickness made gradually smaller in direction from said proximal end toward said distal end.